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European Union's Post Crisis Financial Regulatory System – a Brief Analysis of Existing Options

Anca Tanasie[a]*, Lavinia Netoiu[a], Daniel Cîrciumaru[a], Titu Netoiu[a]

[a]University of Craiova, Faculty of Economics and Business Administration, University of Craiova, 200585, Craiova, Romania

Abstract

Given recent developments in terms of economic and financial evolution during recent years, the question concerning the architecture and the central pillars of a new financial regulatory system, is frequently raised inside the EU, by both academic, political and business environment. That is the case, mainly due to the limited efficiency of previously employed instruments, to an increase in instability of the financial side of the economy unless drastically controlled, but also due to the need for viable alternatives. The Euro Area established certain financial support mechanisms meant to bring back onto a floating level seriously damaged economies – bankrupt or affected by the foreign debt crisis, but preventing mechanisms have not yet been installed, and the transition towards a new stage of economic growth and expansion would further even more this possibility. This paper envisages to provide a brief assessment of such options – elements composing a solid financial regulatory system in Europe. Also, a brief analysis of the existing architecture is presented. The focal point is the Tobin tax alternative for the European Union, with an effects' assessment from a multiple point of view – stability, prevention and revenue raising

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* Corresponding author. Tel.: +4-0722-997-528.
E-mail address: ancatanasie@gmx.de

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1. Introduction

The present paper develops on the macroeconomic effects of the Tobin tax – as an alternative financial market control mechanism, The approach is leaving from the theoretical birth of the concept, also during a period of strong recession – the great depression 1929 - 1933, also with deep financial roots and evolves through the analysis of possible positive impact on the European economy. Such positive effects, except from limiting speculative short term transaction on the foreign exchange rate market, could also be considered from the point of view of the income provided to the settling authority, as trading level has significantly increased during contemporary era. The European Union and Europe as a whole, has suffered recently from most acute negative effects and destabilization due to the present economic and financial crisis, as a counter-measure, certain protection and/or reparatory mechanisms have been put into place, but still previous lack of discipline and control could not have been completely compensated. As a consequence, this paper conducts a comparative analysis between the Tobin tax and other existing and functioning instruments, with a special emphasis on the preventing factor. Both the theme and the approach are most actual and opportune, as the EU member states are just considering putting into practice this instrument – the Tobin tax. Alternatives, positive and negatives effects are considered but also, a brief estimation of impact is conducted in order to provide an appropriate and thorough basis for the present analysis. Opinions are divided among EU member states - Germany, France or Spain are in favour of it, but, on the other hand – the UK, given the size of the London financial center, is against this project. Each of the sides is bringing a set of arguments on its own side, such as a possible transfer of transactions towards Switzerland, Asia or other newly created financial paradises, or it might be as well transferred from the direct participants on the foreign exchange markets towards private customers of banks or other financial institutions. An increase in volatility is also invoked as a counter- argument, and positive one range from an increase in control and discipline, and to increase in terms of public income.

Literature review

„*The Tobin Tax*" as a concept has been first defined by the Nobel prize awarded winner and Yale - economist James Tobin. The concept points towards a category of tax, settled by national/international authorities in order to diminish harmful and unbalancing speculation on foreign exchange markets by means of supplementary costs when engaging in such transactions. They key aspect here is the cost increase that would discourage speculative actions, but also generating supplementary revenue for the generating authority.

Looking even further back towards economic theory, the Tobin tax develops an earlier idea proposed by Keynes in 1936 in his famous work- *The General Theory of Employment, Interest, and Money*. At that time, Keynes proposed the introduction of a limited size transaction tax, increasing costs and thus discouraging destabilizing actions upon financial markets. Similar to present time, the great depression 1929 – 1933 – has been the source for such an idea and the possible solution for managing negative consequences of economic contraction. As history tends to repeat itself, recent developments on the financial market, Wall Street evolution and the bubble created, have been the sources both then and now. Looking for solutions in this respect, according to deGrawe – this alternative of the Tobin-tax has soon become the most popular proposal aiming to control capital transactions given the higher price, it discourages short-term capital movements with more or less speculative purpose, still keeping long term flows relatively unaffected. (deGrawe 2000)

As it has been initially conceived, the Tobin tax as a control and taxation instrument, aimed to have as application basis - all short term financial transactions in the area of the foreign exchange market and the effects targeted are also spot or short term, as financing has to be limited to a shorter period of time, and other types of transactions such as trade and long-term capital investments were be affected in a negligible manner.

The variation interval of the Tobin tax has been initially defined as 0,1% to 1%, with a 0,2% to 2% tax cost for each exchange and a 48% to 480% per year if transacted every business day, 10% to 100% per week and 2,4% to 24% every day.

Frankel (1996) approached the Tobin tax for a different perspective, stressing the fact that it rather penalizes short-term investments - the shorter the horizon of time, the higher the costs, and thus, in a certain way, existing

liquidity would be affected. Establishing an accurate rate for the Tobin tax is decisive in determining the degree of feasibility of this instrument. That is mainly due to the far from stabile or predictable evolutions of the financial markets nowadays. But, beyond this level discussion among theoreticians, practice points out the fact that, the key issue here is the correct designation of the imposing basis. Different effects may be generated by such an approach – limited application of this taxation instruments on short term transaction may lead to a shift towards traditional trading towards derivate instruments, that represent, partly the cause for the present economic and financial crisis.

Regarding futures, swaps and options, as important pieces of the financial market "puzzle" Goodhart (1996) and Bird,Rajan (2000) believe that they would also become instruments of speculation ad channels of avoiding the spot market under different circumstances.

The most cited work when analyzing the Tobin tax - Eichengreen, Tobin and Wyplosz (1995) - Eichengreen, B., Tobin, J., Wyplosz, C. - *"Two Cases for Sand in the Wheels of International Finance"*, The Economic Journal, Vol, 105, No, 428 – is in favour of "*putting grains of sand in the wheels of financial markets*", but also supports the idea of future positive welfare implications in such cases when the negative effects of the financial market present themselves under the shape of shocks on labour and commodities market. Discouraging speculative effects, short term attacks and limiting volatility – are widely considered, according to al these authors as the central purposes of such a tax, from the posture of – second best alternative of controlling the foreign exchange rate market, when considering as variable the short time interval. This would seem as the most probable attack channel when whishing to destabilize and gain profits from uncertainty and speculation without any real background.

Literature, in its majority, points towards the establishment of the positive or negative influence of speculation on a certain market, also according to intensity or frequency. Theoretical approach covers a wide interval from Keynes (1936), to Milton Friedman (1953) and Dornbusch and Frankel (1987), Keynes's (1936) approach presents speculative behavior as a "*beauty contest*". In this contest, the main aim is not have an accurate image on the market value, but to defeat the market by its own weapons - to '*anticipate what average opinion expects the average opinion to be' and to 'guess better than the crowd how the crowd will behave'* as Keynes said in 1936.

Another question raised by literature is the speculation determinants in terms of market equilibrium, and here, the key role is played the contribution in determining a fundamental value of the traded titles. The warranted price on such a market is also under the influence of such variables capable of generating such results. An accurate and exact estimation of the warranted price, even if not an easy task, comes under the preoccupation of speculators, in order to empower them to determine the threshold that would render their desired speculative profits. The hypothesis of such an equilibrium, either does not existing or not being straight forward in determination by the market participants, is consistent with the assumption that the price would further increase. This has been exactly the cause for the financial bubble at the origin of the contemporaneous economic and financial crisis. Essentially, crisis developments point out towards the fact that higher speculative profits would rather come from the short term oriented transactions, rather than from an accurately based - equilibrium price decision of selling and buying on the regular financial market by regular participants, Such speculations have been proven to be the real causes of instability and artificial market bubble, envisaging both short and long term, even is there is quite a difference in amplitude. As an accurate evaluation of the exchange rate is not fundamental, this instrument – the Tobin tax, as it has been initially defined, but with a specific settlement and personalized in size according to the specific market, is considered to work as an automatic detector for the equilibrium price working by means of limiting speculative attacks and proving better, more efficient and more oriented than other regulatory mechanisms. (Menkhoff and Michaelis, 1995).

2. Methodology

Present research involves both an empirical estimations of the Tobin tax on volatility of the Euro exchange rate and international trade of the EU using the Aliber (2001) model, and a comparative analysis from a qualitative point of view with other existing instruments.

Since the negative effects of the economic and financial crises materialized in countries of the European Union under the shape of excessive budget deficits or dangerous levels of foreign debt that threatened their economic stability and financial position, the EU and the Euro Area built some major back-up instruments such as:

- *The European Financial Stability Facility* (EFSF) - as one of the instruments meant to safeguard stability in the Euro-area, within the EcoFin framework, settled and in strict accordance with the aim of providing support to member states in need of financial back-up (Tanasie 2012);
- *The European financial stabilisation mechanism (EFSM).*

These are support mechanisms for stages of the manifestation of disequilibrium inside the EU, while the Tobin Tax has also been envisaged as a prevention tool-kit that would diminish the possible causes for speculation and the creation of a new financial bubble.

3. Analysis

The 2014-2020 EU budget proposal, drafted by the European Commission employs for the first time, a levy on financial transactions, or a "Tobin tax," The first such tentative dates back to 2011 when the Commission president estimated a revenue of around 30% of the EU budget and re-raised the historic anti-crisis tool proposed decades ago by Keynes. This has brought back the perspective of a regulatory financial system, rather than the liberalist approach from recent pre-crisis period, when economic growth ensured the premises for such a preference from market participants. Financial trading in Europe has never before been subject to such taxation instruments, even if volumes have been increasingly here, Initial estimates raised, according to the EU Commission, to a steady constant level of 50 billion Euros per year. As previously emphasized, the applicable percentage is also a key issue and very relevant to the degree of efficiency, and from the taxation basis point of view - 0,01% of derivatives and up to 0,1% exchanges of sovereign bonds were to be affected.

Several empirical studies concerning the effects of the Tobin tax on the financial market in general, and on volatility in particular, have been conducted and results depend on author, but still range inside a certain interval depending on the dimension of the financial market and number of countries analyzed, but also on the time frame, Roll (1989) examines volatility of stock returns on more than 20 countries between 1987 and 1989, and finds no relevant evidence of influence of the Tobin tax on volatility, Saporta and Kan's (1997) results are quite similar for UK, Umlauf's (1993) results for Sweden between 1980 and 1987 show that the increase of the Tobin tax by 1% generates volatility, while Bessembinder and Rath (2002) prove that stocks traded from NASDAQ to NYSE, felt a decrease in volatility.

Hau's (2006) analysis correlates the augmentation in the cost for trading stocks in France, with a rather significant increase in volatility, while Aliber, Chowdhry, and Yan (2003) observe an increase in volatility on a currency market where the Tobin is applied. Thus, empiric results fall into two categories covering both pros and cons – volatility and non-volatility generating effect.

Present analysis is based on Aliber's model, according to Jaouadi (2013) – the most recent empiric approach on the subject of the Tobin tax effects estimates, Aliber et al (2001), aimed at establisihing the effect of the Tobin tax on the exchange volatility and international trade, The model is depicted as following:

$$Volatility_t = \alpha\, Cost_t + \beta Volatility_{t-1} + \varepsilon_t \quad (1)$$

$$Trade_t = \gamma\, Cost_t + \delta\, Trade_{t-1} + \epsilon_t \quad (2)$$

Where ε_t and ϵ_t represent the errors and volatility represents the difference in exchange rate between two consecutive years t and t-1. According to economic theory, cost depends on the difference between the equillibrium terms on a certain market and such we have the margin between the supply and the demnad as the cost of the transaction, indifferent of the market we analyse. According to Aliber (2003) and Jaouadi (2013) money morket equillibrium is subject to the terms in the following equation:

$$F_t = S_t \frac{1+i}{1+i^*} \quad (3)$$

with i and i^* being the national and international interest rate, while F is the future exchange rate and S represents the sport exchange rate.

We logarithmate (3) and we compute the difference between T1 and T2 as following:

$$\ln \mathbf{F}(\tau, T) - \ln \mathbf{S}(\tau, T) = i(\tau, T) - i^*(\tau, T) \quad (4)$$

$$lnF(\tau, T_2) - lnF(\tau, T_1) \approx i(\tau, T_1, T_2) - i^*(\tau, T_1, T_2) \quad (5)$$

After computing the sum, we get:

$$p(T) \approx \Delta(T) \quad (6)$$

and

$$D(T) \approx \Delta(T) - p(T) \quad (7)$$

From this point, the cost of the transactions with currency on the market is represented by the difference of the two terms in the equation above and consequently, authors wen further with the covariance of this difference using:

$$Cost = \sqrt{\frac{1}{2} Cov(Dt)} \quad (8)$$

In this paper simulations use data from the Eurostat for the exchange rate of the Euro as basis for computing the volatility and the exports and imports values as shares of GDP as indicators for the foreign trade. The data sample covers the period of time between 2002 and 2012 for the EU and Euro, while estimations use the OLS – ordinal least squares method.

These are the instruments we considered empower us to provide a brief but comprising analysis of the Tobin tax influence on volatility and trade – two of the key elements determining both macroeconomic situation inside the EU and the Euro Area, but also the extent of negative effects of the crisis disequilibrium as consequence of the contagion effect.

Results of the effect of the Tobin tax on the volatility of the foreign exchange rate of the Euro, are as following:

Table 1.The effect of the Tobin tax on the volatility of the foreign exchange rate of the Euro

	EU
Transaction cost	2,83
	(0,58)
Exchange volatility t-1	0,53***
	(8,7)
R^2	22,1%

Source: author's computing

Results of the effect of the Tobin tax on international trade, on an EU level, are as following:

Table 2. The effect of the Tobin tax on international trade

	EU
Transaction cost	-1,89*
	(-1,85)
Exchange volatility	0,53***
	(4,59)
International trade	0,91
	(31,08)
R^2	82,1%

Source: author's computing

Results make once again the point of the sensitivity of volatility as a concept, given the weakness of the R^2in the first table containing the results and thus explain why much estimation do not provide explanations for the real-life evolutions. Aliber model estimations generate results showing a double-sense effect: an increase in volatility simultaneously with a reduction in terms of international trade that would otherwise come as a logical consequence. Here, the discussion of the tax level should be raised in order to provide a complete explanation of the phenomenon. The focal point is the share of the tax in the trader's costs, as it should diminish the opportunities for exchange rate fluctuation to provide speculative profits.

Further on, comparison should be achieved on a quantitative level with the income generated to the EU budget, and from a qualitative point of view with other regulatory instruments already installed.

First we shall approach the quantitative side of this comparative analysis, and according to "*the Impact Assessment accompanying the Proposal for a Council Directive on a Common system of financial transaction tax and amending Directive 2008/7/EC (SEC(2011) 1102), at a tax rate of 0,1% for securities and of 0,01% of the notional value for derivatives agreements and payable by each side of a transaction, the revenue estimates for the tax are about €57bn*"[†].

Structurally speaking, about 30% would be generated from taxation, crediting in bonds and shares, and around 60%would be generated by taxing derivatives. Also, taxation of the interest rate linked derivatives would generate something like 50%.

Table 3. Revenue estimates for the EU

Product	Rate (%, for each tax payer)	
	0,01	0,1
Securities		19,4
- shares		6,8
- bonds		12,6
Derivatives		37,7
- equity linked		3,3
- interest rate linked		29,6
- currency linked		4,8
		57,1

Source: Impact Assessment accompanying the Proposal for a Council Directive on a Common system of financial transaction tax and amending Directive 2008/7/EC (SEC(2011) 1102)

On the comparative analysis side of this paper, the two envisaged instruments are:

- The European Financial Stability Facility (EFSF) is one of the instruments meant to safeguard stability in the Euro-area, within the EcoFin framework previously settled and in strict accordance with the aim of providing support to member states in need of financial back-up;
- The European financial stabilization mechanism (EFSM).

They have been put into place by the EU and the Euro Area as a response to crisis developments while providing the minimum financial back-up for the affected member states, but also wishing to prevent future imbalances. As

[†]Technical Fiche – Revenue Estimations - http://ec,europa,eu/taxation_customs/resources/documents/taxation/other_taxes/financial_sector/fact_sheet/revenue-estimates,pdf

part of the EFSF we encounter the following employable instruments in case of requirement from Euro-area member states: loans provided to countries in financial difficulties, intervention in the debt primary and secondary markets, based on an ECB analysis and conclusions in respect of the existence of exceptional financial market circumstances and risks to financial stability of the Euro-area, action based on a precautionary program, finance recapitalizations of financial institutions through loans to governments[‡].

Aiming to fulfill its supportive mission, the EFSF issues bonds or other debt instruments on the capital markets and has been backed by guarantee commitments from the euro area Member States for a total of €780 billion and has a lending capacity of €440 billion. From the credit ranking perspective, the EFSF has been assigned by Moody's and Fitch Ratings the best credit ratings -(Aaa), (AAA) and AA+ rating from Standard & Poor's[§].

The European financial stabilization mechanism (EFSM) provides assistance to Member States where: a Member State is experiencing, or is seriously threatened with, a severe financial disturbance; the financial disturbance or threat of financial disturbance is due to events beyond the control of the Member State concerned – according to the European Commission, Up to this point, the EFSM has granted financing to Portugal and Ireland based on its two main requirements – the assessments of the states needs, and an economic and financial adjustment program and on the Council's decision[**].

Under these circumstances, where could it be, the place and the role of the Tobin tax? Could it act a financing instrument also? Could it raise capital at the same time with limiting the financial market instability due to speculation? Or is it just a prevention mechanism with a potential of revenue generation?

Majorly, a pro or against decision position comes from an estimative analysis of costs and benefits, but that is not all, The *medicine* role of the Tobin tax also largely depends on the state of the financial market at a certain moment in time, While normal development intervals are more likely to support free financial market and an auto-regulatory mechanism from within, crisis intervals, on the other hands, could require, also on a financial level as on regular markets, a higher level of control regulation or even restrictions, Thus, the EU perspective on the Tobin tax does not limit to the foreign exchange market control, but it also focuses on the income creation effect for the EU budget

Conclusions

Concluding, from a purely theoretical point of view, the Tobin tax has got quite a strong conceptual background, even if evolution of economies and of the structure and size of the financial markets have brought significant changes and the need for flexibility and adaptation. From the volatility point of view, both on a strictly theoretical approach or, even on the empirical sides, results seem to be rather indicating and increase. On an European level, recent debate must also take into account the implementation side not just the effects, even if predictions indicate a quite high level of public revenue from such taxation.

Given the crisis generate need for a new economic paradigm, the choice between the free deregulated financial market and regulation, clearly comes in the area of regulation, but for the moment, theoretical simulations do not determine the Tobin tax as the appropriate instrument. The strong point compared to the other already implementing mechanisms, seems to be the desired preventing role, that is somewhat counter-balanced by the increase in volatility and decrease in trading volumes.

References

Aliber R. Z., Bhagwan C., Yan S. 2001.Some evidence that a Tobin tax on foreign exchange transactions may increase volatility, European Finance Review, 7, pp. 481-510, 2003.

Bessembinder, H. Rath, S. 2002. Trading Costs and Return Volatility: Evidence from Exchange Listings, Working Paper, University of Utah;

De Grauwe, P. 2000. Controls on Capital Flows, Journal of Policy Modeling, Vol, 22, No. 3, pp. 391 – 405.

[‡] http://ec.europa.eu/economy_finance/eu_borrower/efsm/index_en.htm

[§] Idem

[**] Idem

Dornbush, R. Frankel, J.A. 1987. The Flexible Exchange Rate System: Experience and Alternatives, National Bureau of Economic Research Working Paper, 2464, December 1987.
Eichengreen, B. 1997. Volatilité, Un mal à taxer ?, Courrier de la Planète, mars-avril 1997.
Eichengreen, B., Wyplosz, C. 1993. The Unstable EMS, Brookings Papers on Economic Activity I, 1993.
Friedman, M. 1953.The Case for Flexible Exchange Rates: Essays in Positive Economics, University of Chicago Press, Chicago, (1953).
Hau, H., 2006. The Role of Transaction Costs for Financial Volatility: Evidence from the Paris Bourse, Journal of the European Economic Association 4.4, 862-890.
Jaouadi S. 2013. New Evidence from Assessing the Tobin Tax Effects on Exchange Stability and Trade - Business and Economic Research, Vol. 3, No. 2, ISSN 2162-4860.
Keynes, J.M. 1936.The General Theory of Employment, Interest and Money, Macmillan Press, London, 1936.
Menkhoff, L., Michaelis, J.1995. Steuern zur Begrenzung unerwünschter Währungsspekulation, Aussenwirtschaft, 50, Jahrgang, Vol, III, Zürich, pp, 443 – 462, 1995.
Roll, R., 1989. Price Volatility, International Market Links, and Their Implications for Regulatory Policies, Journal of Financial Services Research 3.2-3, 211-246.
Saporta, V. and Kan, K.,1997.The Effects of Stamp Duty on the Level and Volatility of Equity Prices, Bank of England Working Paper No 71.
Tobin, J.1978. A proposal for International Monetary Reform, EasternEconomic Journal, Vol. 4, 153-9.
Tobin, J. 1984. On the Efficiency of the Financial System, Lloyds BankReview, (1984).
Tobin, J. 1972 .The New Economics, One Decade Older , Princeton University Press, 1972.
Umlauf, S.R., 1993. Transaction Taxes and the Behavior of the Swedish Stock Market, Journal of Financial Economics 33.2, 227-240.